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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/714,138

11/14/2003

Mark Bohr

42P13758D

9938

8791

7590

12/06/2005

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EXAMINER

WEISS, HOWARD

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/714,138		BOHR, MARK	
	Examiner		Art Unit	
	Howard Weiss		2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>0905</u> . | 6) <input type="checkbox"/> Other: _____ |

Attorney's Docket Number: 42P13758D

Filing Date: 11/14/03

Continuing Data: Division of 10/226,498 (8/22/02 now U.S. Patent No. 6,686,247); RCE
established 6/13/05

Claimed Foreign Priority Date: none

Applicant(s): Bohr

Examiner: Howard Weiss

Information Disclosure Statement

1. The information disclosure statement filed 9/6/05 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the information is not based upon the related PCT search report of the instant application. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1 to 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka et al. (U.S. Patent No. 6,696,732), Chappell et al. (U.S. Patent No. 5,541,427) and Dennison et al. (U.S. Patent No. 5,348,899).

Matsuoka et al. show most aspects of the instant invention (e.g. Figure 23) including:

- an active region **14** with a gated device **14c** in an SRAM cell (Column 10 Lines 9)
- a dielectric layer comprising a conformal silicon nitride etch stop **20a**, a planarized first dielectric layer **20b**, a second etch stop layer **42** and a second dielectric layer **26**
- first to fourth contacts **44,46** which either go through the dielectric layer and either stop at the etch stops or go to the gate **14c** and a junction region **14a,b**

Matsuoka et al. does not show the dielectric layer having a first thickness over the gate and a second thickness greater than the first thickness adjacent to the gate and a contact in the active region extending a first depth through the first thickness to the gate of the gated device, and extending a different second depth through a portion of the second thickness short of the junction region.

Chappell et al. teach (e.g. Figures 3 and 4) to have a dielectric layer **32,34** (made of essentially three layers of etch top materials) with a first thickness (i.e. layer **32**) over a gate **18** and a second thickness (i.e. layers **32,34**) greater than the first thickness adjacent to the gate (i.e. over junction region **31**) to help provide a small SRAM cell (Column 1 Lines 45 and 46) and to protect the underlying diffusion regions (Column 4 Lines 17 to 20). It would have been obvious to a person of ordinary skill in the art at the time of invention to have a dielectric layer with a first thickness over a gate and a second thickness greater than the first thickness adjacent to the gate as taught by Chappell et al. in the device of Matsuoka et al. to help provide a small SRAM cell and to protect the underlying diffusion regions.

Dennison et al. teach (e.g. Figures 2 and 3) to form a contact **50** extending a first depth through the first thickness to the gate of a gated device **40,42**, and extending a different second depth through a portion of the second thickness short of a junction region (which would be located below the gate oxide **34**) to minimize photolithography and etching steps (Column 2 Lines 29 to 34). It would have been

obvious to a person of ordinary skill in the art at the time of invention to form a contact extending a first depth through the first thickness to the gate of a gated device and extending a different second depth through a portion of the second thickness short of a junction region as taught by Dennison et al. in the device of Matsuoka et al. to minimize photolithography and etching steps.

Response to Arguments

4. Applicant's arguments filed 10/12/05 have been fully considered but they are not persuasive. The Applicant states that the incorporation of the electrode structure of Dennison et al. into the device of Matsuoka et al. "would render local wiring **24** of Matsuoka improper for its intended purpose of connecting gate electrode **14c**, source drain region **14b** and source drain region **16a**, because electrode **50** is not allowed to reach the adjacent substrate and thus would not contact region **14b** or **16a**. (See MPEP j 2145.X). Similarly, the combination would render electrode **50** unsatisfactory for its intended purpose of not reaching the substrate, if electrode **50** were combined with wiring **24**, because wiring **24** must reach the substrate to connect electrode **14c**, region **14b**, and region **16a**. (See MPEP j 2145.X)."

However, the Examiner uses another embodiment as shown in Figure 23. Here, the wirings to the source and drain regions **14a,b** are separate from the wirings to the gate electrodes **44c** and the gate contact does not need to be connected to both the gate and source/drain contacts. Therefore, the contact **50** of Dennison et al. ~~does~~ only needs to go the partial depth as taught.

Also, the contacts of Matsuoka et al. ~~with~~ go through more than one thickness when combined with the other prior art references. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In view of these

reasons and those set forth in the present office action, the rejections of the stated claims stand.

Conclusion

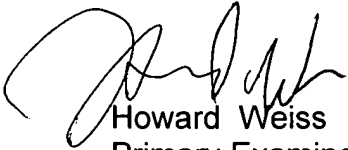
5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).
6. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**.

Art Unit: 2814

8. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/368, 369, 755, 903	thru 12/1/05
Other Documentation: none	
Electronic Database(s): EAST	thru 12/1/05

HW/hw
2 December 2005


Howard Weiss
Primary Examiner
Art Unit 2814